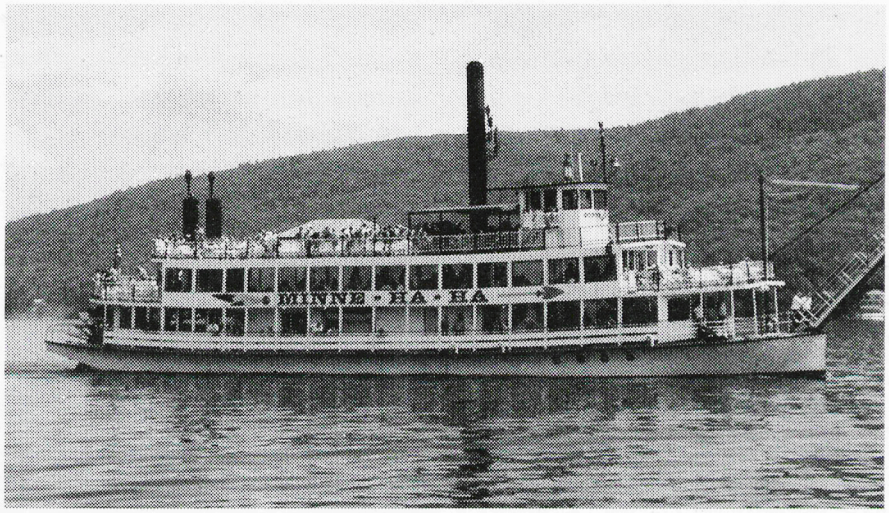
Lake George. . . "The Queen of American Lakes"

By JULIE A. MARTIN and SHARON BORGOS

Lake George is, without comparison, the most beautiful water I ever saw; formed by a contour of mountains into a basin thirty-five miles long and from two to four miles broad, finely interspersed with islands, its water limpid as crystal and the mountain sides covered with rich groves of Thuja, silver fir, white pine, aspen and paper birch down to the water's edge, here and there precipices of rock to checker the scene and save it from monotony. An abundance of speckled trout, salmon trout, bass and other fish, with which it is stored, have added to our amusements the sport of taking them.

Thomas Jefferson, 1791



Cruise ships journey up and down Lake George.

Perhaps one of our founding fathers described it best. The detail of his description paints a picture of Lake George in the mind of anyone reading the above passage. Jefferson was one of many prominent historical figures to sail the waters of Lake George. To think that Jefferson, despite his broad range of experiences, noted the beauty of Lake George so eloquently is a tribute to the "Queen of American Lakes." Today, his portrayal serves as an inspiration to ensure that Lake George remains recognizable within Jefferson's description tomorrow.

Lake George is a beautiful panorama of mountains, trees, and crystal blue water, dotted with islands that are seemingly endless. Its beauty still overwhelms the senses of those who experience Lake George first-hand, however much of it has changed since the time of Thomas Jefferson. The depth and richness of the region still impresses even the casual spectator. Lake George is an invaluable gem, a glistening jewel that has witnessed years of untold history. It is the epitome of recreational, geological, ecological, military, environmental and maritime history. The Lake is a paradise to the avid diver, inquisitive historian, spiritual thinker, probing archaeologist, landscape artist, outdoor enthusiast, and a recreational playground for children and adults alike.

The Lake George ecosystem is breathtaking and diverse. The jagged Pre-Cambrian shores and mountains surrounding Lake George are among the oldest observable rocks in the Northeast. Ten mountains rim the lake, including Black Mountain, the tallest within the watershed. Six forest types are located within the Lake George Basin. More than 400 species of birds, 90 species of mammals, reptiles and amphibians inhabit the region. Two hundred twenty-four native plant species thrive in and around the lake, with an estimated 30 freshwater aquatic plant species. Lake George supports a two-story fishery with 45 warm and cold-water fish species. Lake George ranks first in the production of landlocked salmon and seventh in the production of lake trout in New York State.

Recreational adventurers began using the Lake George wilderness in the 19th century and it was not long before the entrepreneurial elite began building mansions along its lakeshore. Lake George then became a vacation hotspot for the

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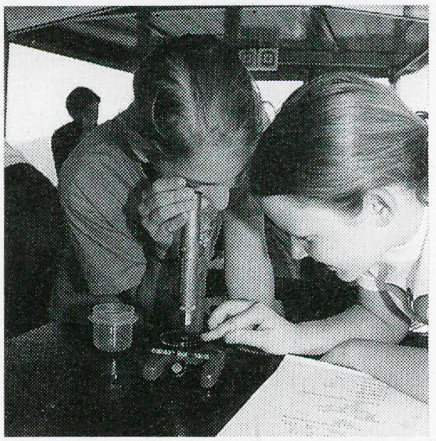
middle class and continues to remain popular to this day. By mid-20th century, many mansions were converted to motels and subdivisions. Then came planned unit developments and condominiums.

As the southeastern gateway to the Adirondack Park, Lake George is easily reached from metropolitan areas via the Adirondack Northway. More than two million tourists visit the region during the peak months of June, July, and August. It is classified as one of the most intensively used water bodies in the United States. Boating, swimming, camping, scuba diving, water skiing, fishing, windsurfing, sailing, tubing, canoeing, and para-sailing all take place within its shores. Cruise ships journey up and down the 32-mile long lake, providing visitors with a glimpse of what the lake has to offer. Bars, restaurants, hotels, motels and shops surround the lake. Lake George serves as an extremely significant economic resource that drives the greater Lake George region and southern Adirondack tourist economy, bringing millions of dollars into New York State.

Popularity, however, is not always a good thing. The downside comes from the various pressures that people place on the natural environment. To the untrained eye, Lake George appears relatively unaffected by the cumulative impacts of time, natural events and increasing human activity within the watershed. In reality, Lake George has not been immune to these impacts. The negative effects of imperfect planning and development are evidenced in several ways — most notably by the aesthetic impacts on the shoreline and surrounding hillsides and the declining water quality of the lake.

Some of these pressures can, through resource management, be avoided or mitigated while others cannot. It is important for those who utilize Lake George to understand that the entire Lake George watershed is an ecosystem and activities occurring within the watershed affect the lake. Management of the watershed is critical to the health of the whole ecosystem.



Students on the LGA's Floating Classroom™

Challenges to a special place

In 1885, a small group of individuals gathered together to initiate an association with a simple goal — to give back to the lake what it was giving to them. Today, the Lake George Association (LGA), Inc. continues to respond to the modern challenges facing this special place. The LGA follows its mission, "Working Together To Protect, Conserve & Improve The Beauty & Quality Of The Lake George Basin," through advocacy, education, and broad-based community involvement. Without cooperation, community involvement and open communication, successfully protecting Lake George for future generations will be an uphill battle.

Environmental Awareness

Of all the LGA's priorities, increasing environmental awareness and understanding must be number one. People need information they can understand before they feel willing to take action in the best interest of the lake. Since 1957, the LGA has produced a newsletter (LGA News) to promote awareness and to encourage voluntary participation in action-oriented problem solving. The LGA News is distributed to government agencies, municipalities, legislators, and LGA members. In 1991, the LGA established its Floating Classroom™, an educational program teaching the lake's history and ecology to more than 1,000 school children, and other groups, a year. Groups of 10-15 take a boat expedition with the LGA's Education and Outreach Coordinator and learn to use secchi disks, plankton nets, deep-water samplers, and dissolved oxygen meters to test the clarity and quality of Lake George. A community outreach program aimed at helping property owners undertake lake-saving projects at home augments the Floating Classroom™. Since 1992, the LGA has held a popular Lake Talk Series during the summer that is open to the public and free of charge. And, new in 2001, the LGA developed a Volunteer Stream-Monitoring Program for interested students and adults. This program involves the biological sampling of macro-invertebrates.

Development Pressure

Lake George attracts people from all over New York State, around the country, and around the world. An increase in the number of people creates increasing development pressure. The southern basin, near the Village of Lake George, is by far the most developed area within the Lake George watershed. Dependent on tourism, the Village of Lake George can grow from its 1,000 year-round residents to more than 20,000 in a very short period of time. The southern basin is also the area experiencing the highest levels of nutrient loading, particularly during tourist months, mostly because of polluted stormwater runoff and inadequate wastewater treatment systems. Increasing development pressure is not just affecting the southern basin, but upland areas as well. If not properly managed, development leads to accelerated erosion, failing wastewater treatment systems, and visual degradation. Critical to the future of the Lake George ecosystem is striking a balance between development and the natural environment. The result of unbalanced development not only negatively affects the water quality of Lake George but it also mars the visual panorama that makes it so inviting.

Representing its members, the LGA regularly participates in the public hearing process on proposed land use and lake-use projects and stresses the importance of reasonable and environmentally sound land use practices. With these goals in mind, the LGA recently hosted a "Water Smart Communities" conference in conjunction with the New York Planning Federation with the objective of bringing together Lake George residents to discuss the lake's problems. Through such cooperation, wonderful ideas and past experiences have pointed us in the right direction of balancing land use development with conservation.

Non-Point Source (NPS) Pollution

Non-point source pollution is the leading problem facing water bodies in the United States today and is one of the greatest threats to the water quality of Lake George. Non-point sources are extremely difficult to identify and costly to control. When it is difficult to pinpoint a source of pollution, lake-management efforts become difficult as well. Non-point pollution comes from dispersed sources like residential lawns, agriculture, golf courses, industry, street runoff, construction sites, parking lots and storm drains. By contrast, point sources of pollution are released through a single outlet, such as wastewater treatment plants, and are easily managed. For example, the LGA's perseverance and support of the Warren County Sewer Project resulted in improvements to the Lake George and Bolton plants and the first new system for the Town of Hague in 2001.

In Lake George, stormwater runoff from impervious surfaces, such as parking lots, is the largest source of excess nutrients and pollutants flowing into the lake. Most notable of these are phosphorus and sediment, but also motor oil, heavy metals, and toxic chemicals. The LGA has been the leader, coordinator, and facilitator of more than 40 Lake-Saving Projects to reduce the amount of stormwater runoff and sediments directly entering Lake George from public lands. Such projects include stabilization of eroding stream banks, pond reclamation for stormwater retention and the installation of roadside stormwater catchments. Lake-Saving Projects are now being expanded to include projects on private land as well.

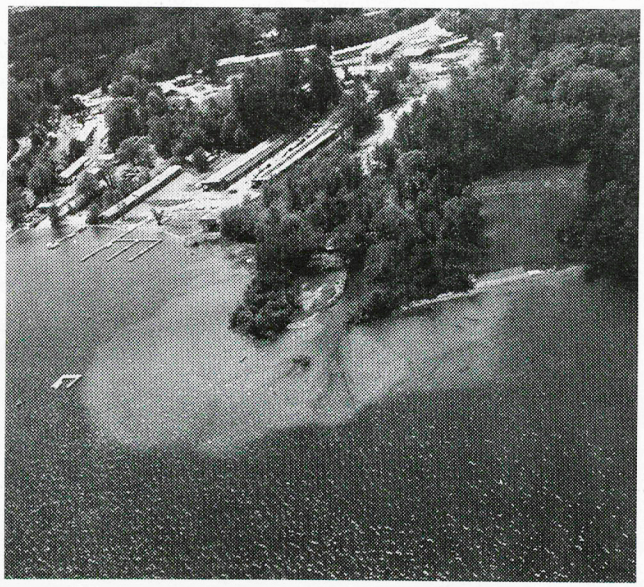
The LGA is also working in conjunction with the Lake George Watershed Conference to develop a "non-point source pollution model" for the Lake George Basin, utilizing geographic information systems (GIS) technology. The goal of the project is to create a static model or picture of potential pollution hot spots within the basin. The model results will be distributed to the municipalities throughout the basin so additional steps can be taken to help restore, manage, and monitor the land while educating people about the problem.

Delta Formations

Human activities in the watershed also contribute to the amount of sediment and suspended solids entering Lake George. Due to many human actions like upland development, highway sanding and road maintenance, logging, inadequate erosion and sedimentation controls, there has been a significant increase in the amount of sediment directly entering the lake. Sediment has attached nutrients that can contribute to the phosphorus load and

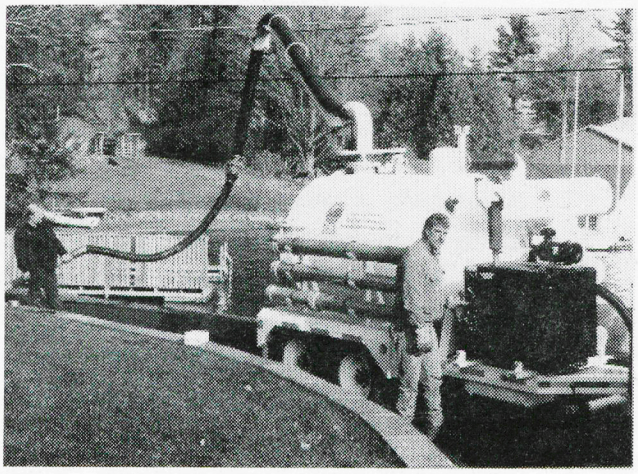
enter the lake via manmade structures and streams. In many shallower parts of the lake the sediment is forming deltas.

Lake George is currently experiencing rapidly expanding deltas in numerous locations around the lake. Accelerated soil loss in upland areas is placing an enormous amount of stress on aquatic communities and contributing further to the disruption of the lake's ecological balance. Not only are deltas an eyesore, but they also decrease water depth and present a significant hazard to navigation. In some areas the growing deltas have led property owners to request variances to extend their docks in order to continue utilizing their shorefront. In addition, deltas limit fish spawning activities and contribute to localized flooding. Deltas also encourage the spread of non-native aquatic plant species due to the favorable, shallower habitat.



English Brook delta is the largest in Lake George.

The Lake George Deltas Management / Shoreline Restoration Project is being facilitated by the LGA on behalf of the various towns and villages surrounding the lake. The project involves planning for the eventual removal of these deltas. The LGA also has a "catch-vac," which is a trailer-mounted vacuum used to clean manholes and catch basins. Purchased by the LGA in 1998, it is used each year by local highway departments and residents to maintain drainage structures to help reduce the amount of sediment directly entering Lake George.



The LGA's "catch vac" is used to reduce sediment load.

Introduction of Invasive Species

In 1985, Eurasian Watermilfoil (*Myriophyllum spicatum*) was discovered in three bays of Lake George. By summer 2001, milfoil had been located in more than 140 different sites throughout the lake. Forty of these are large, dense mats of vegetation. The mats clog bays and hinder swimming and boating activities. Milfoil threatens most of the roughly 30 native freshwater aquatic plant species living in Lake George.

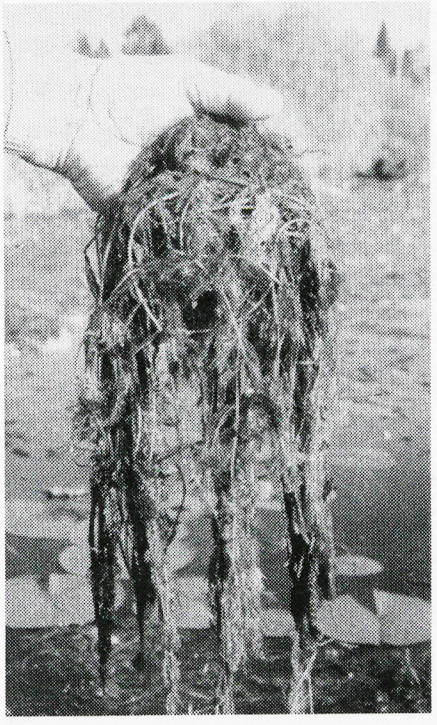
Within two months of the discovery of milfoil, the LGA produced a workshop on state-of-the-art weed control techniques, bringing much-needed information and expertise to decision makers, community leaders, business owners, and residents. The Association has been fighting this species ever since and helped to initiate the statewide "Coalition of Lakes Against Milfoil" (COLAM) in 1993. For the past 17 years, the LGA has advocated the use of the herbicide Sonar to effectively and safely control or eradicate Eurasian Watermilfoil in Lake George. The LGA believes that Sonar is safe for people and environmentally beneficial. Apparently, the most appropriate means to manage this rapidly spreading plant has sparked significant controversy throughout the Adirondack Park.

Unfortunately, if not effectively managed in a timely fashion, milfoil will crowd out indigenous aquatic plants, some of which are inventoried on New York State's rare, threatened and endangered list.

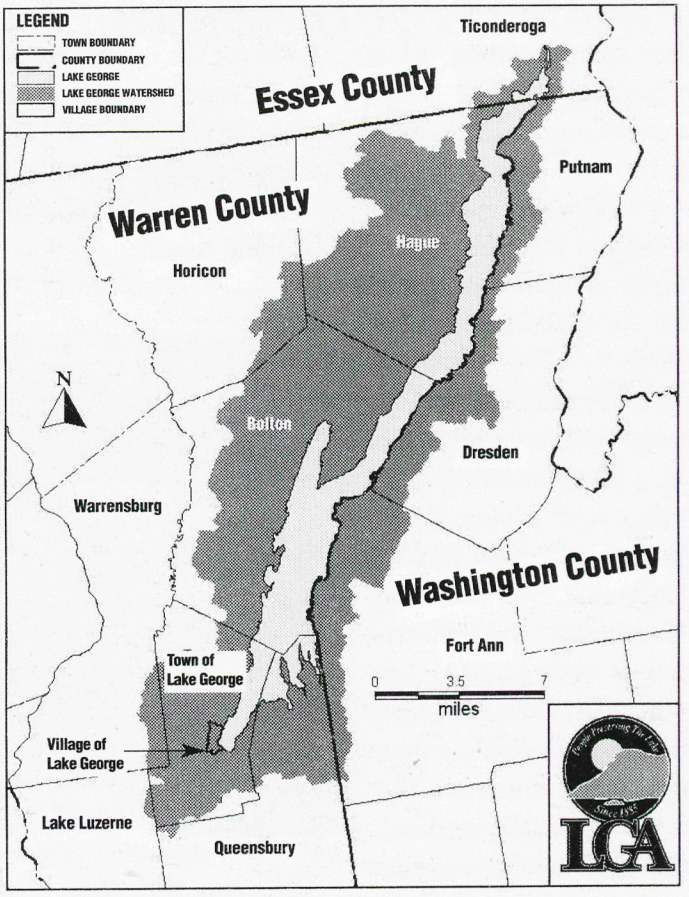
In 1999, zebra mussels (*Dreissena polymorpha*) were discovered in Lake George at a site near the Village of Lake George. Zebra mussels are filter feeders that con-

sume large amounts of the microscopic plants and animals that form the base of the food web. Zebra mussels also clog water intake pipes, litter beaches, reduce native mussel populations, attach to boat engines and can completely obscure historic sunken ships. They also increase water transparency, which may result in an increase in rooted aquatic vegetation, including the non-native milfoil.

With their discovery, the LGA began producing and distributing zebra mussel information and identification cards throughout the watershed. The program led to the creation of the Zebra Mussel Task Force, a coordinating committee of involved organizations that continues to expand. In another project, the LGA developed a Volunteer Zebra Mussel Watch Program to "Keep An Eye Out For Zebra Mussels," providing educational materials on where to find, and how to identify, these non-native mussels.



Milfoil forms dense mats.



The Lake George watershed and political boundaries.

Political Boundaries

Perhaps the most challenging problem facing the lake is not an environmental threat but, rather, the effective coordination of the many federal, state, municipal, and citizen organizations with management interests in Lake George. With so many interests to take into consideration, management is extremely complex in the Lake George watershed. To help in this effort, the Lake George Park was created in 1961 with its boundary essentially the Lake George watershed. Within this 300 square mile area there are also many political boundaries. The Lake George Park includes eleven townships: Queensbury, Lake George, Bolton, Hague, Fort Ann, Dresden, Putnam, Ticonderoga, Lake Luzerne, Horicon, and Warrensburg. Three county governments, Warren, Washington and Essex are also involved. These political boundaries bring with them different jurisdictions, different rules and regulations, town boards, planning boards, zoning boards of appeals, etc. There are also several state agencies involved in the management of the Lake George Basin.

All these different groups have different philosophies and agendas when it comes to managing Lake George. All of these layers of government make it extremely difficult to coordinate the shared goal of

helping to protect the vitality of the lake we love and depend on. Moreover, inadequate funds, a lack of effective communication channels, and local and state politics just add more complexity to every issue.

There is good news, however. In January 1987 a document entitled, "The Plan for the Future of the Lake George Park" was released. Municipal leaders throughout the Lake George Park recently decided that this plan needed updating. In response, a committee called the Lake George Watershed Conference was formed. Twenty-four local and county governments, regional and state agencies and several key not-for-profit organizations, including the LGA, joined in the effort. In 1999, the committee identified and analyzed all existing studies and reports on Lake George, reviewed the recommendations in the 1987 Plan to see what had and had not been accomplished, developed a list of priorities in the basin and identified funding opportunities to finance the next steps.

A long-term strategy for the Lake George Watershed Conference is to "assure that local governments, state agencies, and other organizations work together to maximize the effectiveness of limited financial resources and hope to improve the ability of local governments to access various funding sources." It is critical in the production of such an evolving document that all stakeholders are involved in the entire process. Effectiveness requires cooperation and coordination and without it we will fail in our ultimate goal of protecting the Lake George Basin for the future. As the leading citizen organization, the LGA is one of the many involved groups that is striving to learn through experience how to overcome the challenges of working together.

LGA's display at the 2001 waterfest.

The Lake George Association, Inc.

In 1791, when Thomas Jefferson visited the region on a fishing trip, the Lake George watershed was yet to be managed. Over time however, the incremental impacts of land use development have required increased, more complex management. More complex management brings with it an increase in the number of involved parties. Today, the cumulative effects of human activities have put management in a position where it cannot keep up with the large variety of impacts unless we work together. It is impossible to prioritize effective and efficient action without looking at the whole watershed system.

As the oldest lake association in the country, the LGA has evolved to meet the changing needs of the Lake George environment. The LGA advocates a reasoned, balanced approach to the management of the Lake George Basin to ensure long-term water quality and the economic viability of the basin. The LGA has much experience and is successful despite the political cauldron in which it works.

The LGA has support from more than 5,000 dedicated members consisting of year-round residents, seasonal residents, the business community, local governments, other interested organizations, and individuals who together provide the bulk of the LGA's annual budget. LGA's programs and special projects are supported primarily by voluntary membership contributions, and by grants from corporations, state agencies and private foundations. For stormwater and sediment reduction projects, as well as other projects, the LGA receives grants from the Helen V. Froehlich Foundation, the Environmental Protection Agency (Clean Water Act), the New York State Environmental Protection Fund, and the Department of State. A 7-member Executive Committee and a 24-member Board of Directors guide the LGA. At the LGA office, an 8-member, full-time staff conducts day-to-day operations. The LGA also has part-time support and many active volunteers. The LGA is active on many fronts to address the challenges confronting the lake. We are working hard today — to protect tomorrow.